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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/366,963	08/04/1999	CHRIS HEEGARD		3713

7590
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MONROE, CT 06468

03/28/2003

EXAMINER

ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/366,963

Applicant(s)

HEEGARD ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9, 13, 14 and 18 is/are rejected.
- 7) ☒ Claim(s) 4-6, 10-12, 15-17, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 to 20 are presented for examination.

*****Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Information Disclosure Statement

2. The references listed in the information disclosure statement submitted on 04/15/02 have been considered by the examiner (see attached PTO-1449).

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the difference between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.



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3. Claims 1 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Paik et al. (U.S. PN: 5,233,629).

Paik et al. disclosed an apparatus and method for encoding data for use in the digital communication systems (see col. 4, lines 48-50) comprising a binary convolutional encoder (see figure 2 element 48 and col. 4, lines 50-56) employs a rate 1/2, 64-state convolutional code, in which generators are 171 and 133 in octal. Paik et al. teach the invention as detailed but did not explicitly teach octal generator 175. However, designing convolutional encoders characterized by numbers (octal) referred to as generators for LSB, CSB and MSB is a matter of the designer's choice. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made design various types of generators of octal generator. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to increase the alternatives of encoding and flexibility of configuration that results in heightening the encoding efficiency.

4. Claims 2, 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Paik et al. (U.S. PN: 5,233,629) in view of Oshima et al. (U.S. PN: 4,639,548).

As per claim 2, Paik et al. substantially teach all subject matter claimed in claim 1. Paik et al did not explicitly teach a method of scrambling a data. However, Oshima et al. in an analogous art teach a scrambler and a method for performing scrambling data (see figure 4, element 1a) and encoding a convolutional code (see fig. 4, element 33). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Oshima's scrambler and methods of scrambling in the system of Paik et al. to

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perform an encoded form of a signal that is unintelligible. This **modification** would have been obvious because a person having ordinary skill in the art would have been motivated to scramble a data in order disarrange the elements of a transmission (a telephone or a TV signal) that results in making the signal unintelligible to interception.

As per claims 3 and 14, Paik et al. in view of Oshima et al. teach all subject matter claimed in claims 1 and 2 including Paik et al. teach two coded bits output from a convolutional encoder which are QPSK (in-phase (I) and quadrature (Q) channels) codeword and are selected a constellation subject (see col. 7, lines 12-16).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Oshima et al. (U.S. PN: 4,639,548) in view of Butterfield et al. (U.S. PN: 5,917,852).

As per claim 9, Oshima et al. teach all subject matter claimed in claim 7 but did not **explicitly** teach codeword encoded onto QPSK (in-phase (I) and quadrature (Q) channels). **However**, Butterfield et al. in an analogous art teach a scrambling process within a conventional encoder for encoding a digital data and modulation scheme called QPSK two bits of information per symbol transmitted so that both produced signals are transmitted through the channel (see col. 11, lines 12-25 and col. 7, last paragraph). **Therefore**, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the modulating techniques of Oshima et al. with the Butterfield's (QPSK) modulation to double the amount of data that is being provided through the channel. This **modification** would have been obvious because a person having ordinary skill in the art would have been motivated to decrease the mapping time that results in increasing the speed of data transmitting operation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims **7, 8 and 13** are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Oshima et al. (U.S. PN: 4,639,548).

As per claims **7 and 13**, Oshima et al. disclosed a data communication system comprising a scrambling circuit for providing scrambling patterns (see figure 3, element 1A) and a convolutional encoder for encoding information signal (see figure 3, element 33) whereby the scrambler scrambling the data.

As per claim **8**, Oshima et al. all subject matter claimed in claim 7 including a pseudo random generator (see figure 3, element 23).

Allowable subject matter

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6. Claims 4-6, 10-12, 15-17, 19 and 20, are objected to as being dependent upon a rejected base claim but would be allowable if rewritten independent from including all of the limitation of the base claim and any intervening claims. The claimed invention comprising pseudo-random scramble sequence and a method comprising bits having one of first and second binary values; in the event a bit of the scramble sequence has first binary value, maintaining constellation in a current relationship with respect to constellation axes and in the event a bit of the scramble sequence has said second binary value rotating said constellation (as in claims 4,10,15,19) which the prior art do not teach or render obvious.

Claims 5, 6, 11, 12, 16, 17 and 20, which are directly, or indirectly dependents of claims 4, 10, 15 and 19 are also objected.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 5,416,797 Gilhousen et al.

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization

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where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham
Esaw Abraham

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Albert Decady
ALBERT DECADY
SUPERVISORY PATENT EXAMINER
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